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Medical Library

CLINICAL MEDICINE

LEADING ARTICLES

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JULY
1941

VOLUME 48 NUMBER 7

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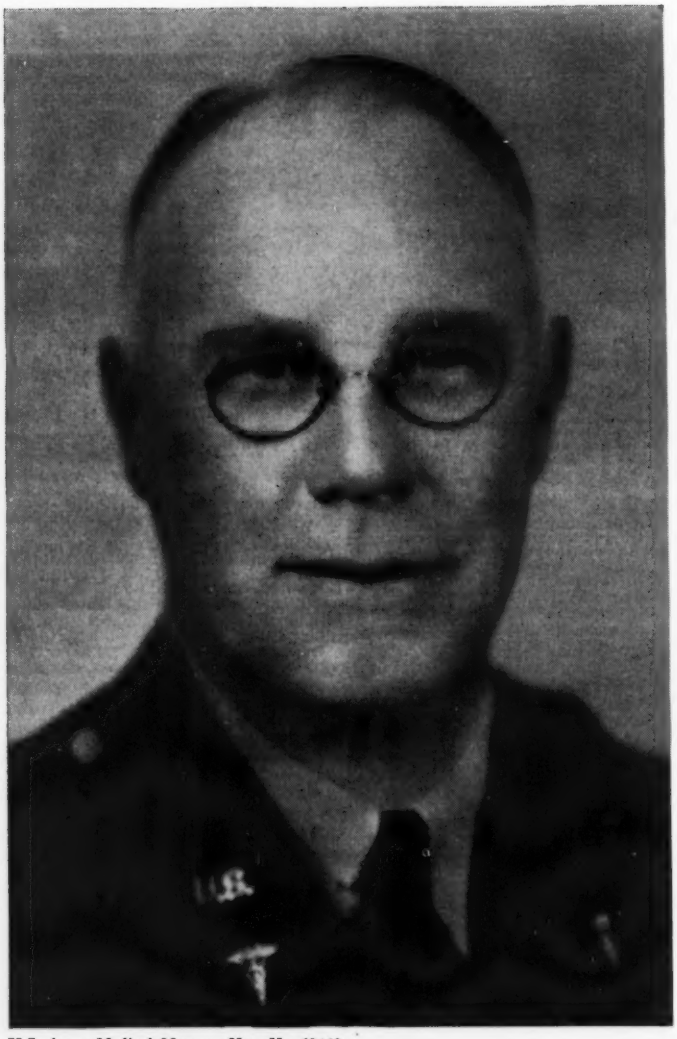

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MAJ. GEN. JAMES CARRE MAGEE, M.D., F.A.C.P., F.A.C.S. (Hon.), Sc.D. (Hon.).

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Clinical Medicine

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★ Editorial ★

James C. Magee

Surgeon General, U. S. Army

In these disturbing days, the leaders in the various departments of our Government are men of unusual importance, even though their names may not often appear in newspaper headlines, so it is a pleasure to introduce to the readers of Clinical Medicine the Surgeon General of the United States Army.

James Carre Magee was born January 23, 1883, and received his medical degree from Jefferson Medical College, Philadelphia, in 1905, and an honorary Sc.D. in 1940.

After practicing his profession for two years, he was appointed a contract surgeon in the Army. After two years of service in that capacity he was commissioned a First Lieutenant, Medical Corps, in 1909, and served in San Francisco, the Philippine Islands, Kansas, and on the Mexican Border. In 1917 he went overseas with the A.E.F., as a regimental surgeon (First Lieutenant), but soon received his captaincy and later was made attending surgeon, returning home in 1919. From 1935 to 1939 he was executive officer at Walter Reed General Hospital, Washington, D.C., and was decorated with the Order of the Purple Heart. He was appointed Surgeon General, with the rank of Major General, June 1, 1939, relieving Gen. Charles R. Reynolds (see Clin. Med. & Surg., Oct., 1935, p. 469).

General Magee is a fellow of the A.M.A. and the American College of Physicians, and an honorary fellow of the American College of Surgeons and The American Association for Surgery of Trauma; honorary president of the Washington Chapter, Pan American Medical Association; and a member of the board of commissioners, U. S. Soldiers' Home; The Association of Military Surgeons and of its advisory board; the Federal Board of Hospitalization; the National Research Council; the Central Committee, American Red Cross; the National Anti-Syphilis Committee of the American Social Hygiene Association; and of the board of directors, American Foundation for Tropical Medicine. He is also a director of Columbia Hospital for Women, Washington, D.C. and is on the board of visitors of St. Elizabeth's Hospital.

We salute General Magee and wish him high courage and clear and patriotic vision for the performance of his heavy and vitally important duties.

Do the work and you shall have the power. This is an automatic process.—George B. Brownell.

Pictures That Teach

Medical education is being immensely furthered by the highly technical skill and the artistic craftsmanship which are now being applied to the illustrations that now embellish our medical books and

periodicals, as well as by the teaching moving pictures which are becoming more and more readily available; so it is important that as many people as possible should be trained in these crafts and skills.

For more than 25 years, Max Brödell, of Johns Hopkins, was the chief, if not the only teacher in this field, and when he retired, about a year ago, many wondered if his school of medical illustration would come to an end.

Fortunately, this important work is to be continued by two of Brödel's pupils, Muriel McLatchie, artist, and Wilbur Lown, photographer, working together. Their school, offering a well-balanced, two-year course, will open at the Massachusetts General Hospital, Boston, September 15, 1941, with excellent facilities for classroom and laboratory work.

It is to be hoped that many of those who have the necessary equipment of hand, eye, and brain will avail themselves of this opportunity to develop these gifts in the service of medical illustration.

NEXT MONTH

The first installment of a highly practical two-part symposium on Surgery in General Practice will appear.

Eric Hardy, F.Z.S., of Liverpool, Eng., will give some helpful suggestions for controlling insects in hospitals and homes.

COMING SOON

"The Treatment of Hypertension: A New Approach, with Critical Laboratory Data," by William LeGrande Cooper, M.D., Los Angeles, Calif.

"Adrenal Stress in Surgical Practice," by Henry R. Harrower, M.D., Glendale, Calif.

It takes nearly as much ability to know how to profit by good advice as to know how to act for one's self.

—LaRochefocauld.

Take a Walk

It requires a considerable amount of more or less expensive apparatus, a good deal of time, and the conjunction of favorable circumstances, if one is to play golf or tennis, ride horseback, canoe, or indulge in various other delightful and popular sports; but all the apparatus one needs for walking is a pair of fairly serviceable feet and legs. One can walk in anything or nothing (if the police don't catch one), and at any time or place, alone or with companions. It is the great democratic, universal, sport, exercise, and recreation.

Although the country is the proper place to walk, if you are so circumstanced that you must walk in the city or not at all, go out into the alleys and back streets, in your oldest clothes, and discover a new world.

Many people think that they must go to some far-away place to find fresh scenes and romantic adventure, but, if you have the high heart and the joyous vision for it, you can find all the variety, romance, and excitement that anyone needs within five miles of your own doorstep.

However, do not expect to find any exhilaration from walking, on paved streets or springy turf, by day or by night, if you go out carrying your office or your house strapped upon your back. Do not expect to see the wonders of God's glorious world while you are wearing the myopic spectacles which you use for studying your ledgers or the market reports in the newspapers. Strip yourself to your naked soul and your eager heart and forget, for the time being, that there is any occupation in the world but just to *walk*.

In these days of busses and interurban cars — to say nothing of the ubiquitous "flivver" — the country is within the reach of almost every one, and it is there that the true inwardness of the philosophy and solace and exuberance of walking are to be found.

Do not start out to *go somewhere*, along the roads, with an elaborate lunch, in a lacquered box, to hamper your movements. Cram an apple, a piece of cheese and a hunch of bread into your pocket, climb the first fence you see, and *just walk*. Dig up a turnip or a potato in some field, wipe it on your pants and eat it "as is." Too few know the joy and satisfaction to be found in a raw potato, munched under a blue and cloud-flecked summer sky, with birds in place of a jazz orchestra, and a drink from some farmer's pump instead of from a silver hip-flask.

If you can get lost in the woods, so much the better. To be lost in a strange country is one of the most exciting experiences most of us ever encounter.

Let some brook or your own musings direct your steps. Stop to *see* the things you usually miss —the moss on the trees, the flowers of the grasses, the spider in his web, and the tumblebug pushing his ridiculous marble behind him.

Pause to listen, whether or no you can recognize the various bird calls all about you and hear the song of the gnat and the bee.

If you can learn how to do it, you can take a very profitable vacation in half a day, and a delightful and refreshing rest in half an hour. It is largely a matter of how much control you have over your mind and whether or not you have permitted yourself to slip into a state of spiritual ankylosis.

If you will limber up your knees and ankles, it will help to limber up your heart. If you can forget your worries and jealousies and ambitions and heart-burnings for a little while, perhaps you can remember the joyous rapture of your youth, the thrill of solitude, and the brooding, satisfying peace of the evening sky.

Take a Walk!

★ Leading Articles ★

An Effective Contraceptive Jelly

By

R. L. GORRELL, M. D., Clarion, Iowa

Every active clinician should be prepared to give his married patients intelligent advice in regard to contraception, and Dr. Gorrell's article will assist him in this important particular.

THE first requisite of a contraceptive appliance or medicament is that it be effective in preventing fertilization, without causing tissue injury. Laboratory tests may presage the effectiveness of a drug or combination of drugs, but clinical proof is decisive.

The usual method of study involves the recording of results following the dispensing of the medication to a large and heterogenous group of women of varying nationalities, desires, power of control, and intelligence. Within such a group are to be found a fair number of sterile men and women, and women whose husbands are also using some contraceptive method, such as condoms. When the method fails, the investigator may not be able to determine whether or not it was properly used *every* time. When it succeeds, the investigator is often unable to state positively that the couple was fertile. Those physicians who have struggled with dispensary patients know that data gathered from such a group must be accepted with caution.

Efficacy in Fertile Women

The only conclusive evidence is this: A woman, whose fertility has been demonstrated by one or more pregnancies and who is in good health, fails to become pregnant while using the contraceptive over a period of years; after discontinuing its use, she becomes pregnant again; finally, the method is resumed and she does not become pregnant as long as it is used.

As fertility must be proved, any figures taken from newly-weds must be discounted heavily because (1) there is often a period of several years, during which time no pregnancy occurs even when no contraceptive measures are employed; (2) a certain percentage of the women are sterile, either temporarily or permanently (due to salpingitis, cervicitis, uterine hypoplasia, glandular insufficiency, et cetera); (3) epididymitis or testicular deficiency has resulted in sterility of a number of the husbands; and (4) conception may fail to occur, owing to very frequent or abnormal intercourse.

The Ideal Contraceptive

Baker, Ranson, and Tynen[1] believe that these should be considered standards for the ideal contraceptive: (1) Inexpensive; (2) unaffected by the ordinary range of climate; (3) contains no volatile or odorous substances; (4) non-irritant to the vagina, cervix, or penis; (5) without pharmacologic effect if absorbed into the blood stream; (6) should contain a substance reducing surface tension, to ensure that the smallest crevices of the vaginal folds will be reached; (7) should kill sperms at S/8 or lower concentrations, in an alkaline or acid medium; (8) the spermicide should diffuse rapidly out of the vehicle into the semen; (9) should be small, and easily portable; (10) solid enough to use without a special applicator; and (11) non-staining.

These authors write, "There are 460,000,000 possible reasons for failure of the contraceptive, in a single ejaculate. There is no branch of pharmacology in which rapidity of action is more important than in chemical contraception, since on each occasion on which a contraceptive is used, *there is no intermediate condition between complete success and complete failure.* If a sperm has time to enter the uterine os, it is presumably out of reach of any spermicide which may be present in the vagina."

Cooper[2] adds several requirements for the ideal contraceptive, among others: (1) It must be physiologic, so that the genital organs can make their natural contact; mutual pleasure should not be diminished, nor should any sensation due to the method be felt; orgasm should occur normally; no pathologic changes should follow; (2) there must be no psychic disturbance (the use of elaborate apparatus just before, during, or immediately after coitus is esthetically discordant and distracting; (3) the method must be entirely in the woman's control, as she is the most vitally concerned in consequences, and the husband's cooperation may not be secured; (4) there must be no elaborate or bulky apparatus, because of crowded living quarters at home and while travelling; (5) the method must be *simple*, as most women will not use any method which requires a complicated technic or elaborate toilet facilities.

The Jelly Used

From 1933 to 1940, I have prescribed only one product, a jelly made by a reliable manufacturer, the active ingredients of which are ricinoleic acid, oxyquinoline sulphate, boric acid, and glycerine (10 percent), in a vegetable-gum base.* The *pH* is adjusted, with acetic acid, to 4.5, which approximates the normal vaginal acidity, and it is well buffered, so that the acidity will be maintained during its period of use. When infection is present in the vagina, the *pH* of the secretions is usually higher, indicating the relationship between disturbed vaginal acidity and infection. The maintenance of the normal degree of vaginal acidity is important, according to Roblee, but the spermicidal action does not depend upon the acidity.

*Ortho-Gynol Jelly, produced by Ortho Products, Inc., Linden, N. J.

Despite exposure to room temperature, refrigerator temperatures, and to warm climates, for a period of one year, the viscosity, texture, and acidity remain constant.

The jelly is bacteriostatic, as shown by the Food and Drug Administration's agar cup plate method. With *Staphylococcus aureus*, the distance of "no growth," in the manufactured jelly, is approximately 5 mm.

The jelly is water-soluble (water-dispersible) and of low surface tension. On vaginal examination, it was found to be cohesive, clinging to the cervix and not dissipated by secretion for many hours. It is spermicidal in vitro and in vivo, and among my patients did not cause irritation or pathologic change of the vaginal canal or penis.

Spermatozoa are rendered immobile in a very short time—often before they can be properly visualized under the microscope. When motile sperms and the jelly are introduced from opposite ends of a microscopic slide, this effect may be seen readily—instant immobilization at the point of contact.

To study the mechanical efficacy of the jelly, it was used and prescribed for 21 patients complaining of leukorrhea and symptoms referable to cervicitis (low abdominal and back pains, discharge, and "cystitis" symptoms), when examination failed to reveal any specific cause of the infection.

The patients were instructed to return to the office in 24, 48, and 72 hours. At the end of 24 hours, a portion of the jelly was always to be found (except in one case of marked prolapse), and in some patients, jelly was still to be seen at the end of 3 days, although regular housework had been carried on and the bladder and rectum were emptied regularly. Fourteen (14) of these patients were markedly relieved of discomfort and discharge. The jelly was not effective in the presence of mycotic vaginal infections or severe cervicitis.

Although the jelly was used daily by 19 of these patients, over a period of 2 months, at no time did any symptoms or signs arise that would indicate irritation or tissue destruction or a sensitivity to any of the ingredients.

The jelly is marketed in collapsible tubes, which contain a sufficient quantity for about 17 applications. An applicator of transparent, non-breakable material (plastic) is furnished, which threads on the tube and is readily filled by squeezing the tube. The patient fills the applicator and thus does not have to guess at the quantity needed. The applicator is inserted into the vagina as far as is comfortably possible and the jelly expelled by pushing the plunger down.

The normal position of the cervix must be determined by the physician, so that the patient may be instructed as to the proper application. Those patients who have a partial prolapse of the uterus should be impressed with the fact that the jelly will be retained best when intercourse is carried out in the usual position; i.e., with the woman lying on her back.

The jelly alone should not be used by patients with markedly relaxed perineums, as clinical and roentgenographic studies show that a jelly is not retained well in such patients. A large, elastic diaphragm should be used in conjunction with jelly, the jelly being placed in the cup of the diaphragm before placing the latter over the cervix.

Where a large family has been raised, the best disposition of the contraceptive problem is bilateral excision of an inch of vas deferens, to sterilize the husband permanently.

Clinical Tests

Records were obtained from 38 patients who had been using the jelly for a prolonged period. Those who had been employing this method less than one year and those whose fertility had not been demonstrated are not included in this report.

Here is a typical case report:

Patient No. 14; age 34; married 9½ years; mother of 3 children; health always good, except for acute obstructive appendicitis one year ago.

Year	No. Exposures	Contraceptive	Results
1931	48	Condom	No pregnancy
1932	192	Douche	Pregnancy 2 months
1933	180	Ortho-Gynol	No pregnancy
1933	1	Vaginal cone (jelly forgotten while on trip)	Pregnancy
1934	204	None	Pregnancy
1935	142	Ortho-Gynol	No pregnancy
1936	128	Ortho-Gynol	No pregnancy
1937	97	Ortho-Gynol	No pregnancy
1938	102	Ortho-Gynol	No pregnancy
1939	96	Ortho-Gynol	No pregnancy

Over a period of 8 years, the results are summarized as follows: Total cases, 38; total exposures, 7,622; total failures, 3 pregnancies.

One pregnancy occurred when both of the couple were under the influence of alcohol; another occurred early in this series, before the measured applicators were used, and there is a question of insufficient dosage; the third occurred in a healthy, young couple who have changed medical attendants, and in whom the method presumably failed. This high percentage of successes compares favorably with that reported by the advocates of the diaphragm and jelly method.

Discussion

That there is no perfect contraceptive technic or agent, goes without saying. *No method is more effective than the intelligence of its users.* However, contraceptive agents with appropriate physical and chemical properties, rapid spermicidal action, and proved stability, will prove effective when the patient is carefully instructed by the physician, and *follows such instructions* exactly and always.

So much has been written on the subject of contraception by lay workers, fanatics, and "pseudo-authorities," that the average practicing physician can find little to guide him in the selection of a desirable contraceptive agent.

The physician's attention should be directed to two practical and valuable books on contraception, both written by able authorities. The first and larger, "Control of Contraception," by Dr. R. L. Dickinson (2nd edition, Williams & Wilkins Company), treats the subject in full and, in addition, includes interesting chapters on the anatomy and physiology of the reproductive systems and the chemistry of contraception. The second work, "The Technique of Contraception," by Eric M.

TABLE I

Method	Advantages	Disadvantages	Efficiency
Condom	1.—Readily carried and available. 2.—May be used by the newly married with spermicidal jelly.	1.—Occasionally defective. 2.—May slip off. 3.—Blunts sensation. 4.—Husband's responsibility. 5.—Inadequate lubrication 6.—Psychologic shortcomings.	Offers good protection.
Medicated Tampon	1.—Readily available. 2.—Wife controls. 3.—For rural use.	1.—Spermicide often loses potency. 2.—Displacement of tampon.	"High percentage of protection" reported.
Spermicide alone	1.—Simplest. 2.—Wife controls. 3.—Applied easily.	1.—Only if not rapidly spermicidal.	
(a) Jelly		1.—Lubricating, if used in excessive dose.	Good in selected patients.
(b) Creams		1.—Marked variance in formulas and results.	Depends on efficiency of product.
(c) Suppositories		1.—Variable melting time. 2.—Greasy; lubricating. 3.—Impossible to place accurately.	Unreliable.
(d) Foaming tablets		1.—Require moisture.	Unreliable.
(e) Powders—blown into vagina		1.—No placement.	Untested.
(f) Sponge and foaming powder		1.—Psychologic handicaps. 2.—Messiness.	Reasonable protection.
Stems, Cervical, Intra-uterine	1.—Does not require patient's cooperation.	1.—Physician only can apply. 2.—May result in cancer or infection.	Good protection.
Safe period	1.—No equipment needed.	1.—Much self-control required. 2.—Many women have irregular menstruations. 3.—Dickinson believes pregnancy may occur at any time in menstrual cycle or during flow.	Reports vary.
Diaphragm and Jelly	1.—Mechanical and chemical protection.	1.—Two methods to apply. 2.—Patient must follow technic exactly. 3.—Rubber deteriorates.	High degree of protection, when used correctly.

Matsner, M.D., also published by Williams & Wilkins, is an excellent outline of various methods, their advantages, disadvantages, and contraindications. It is brief, inexpensive (50 cents a copy) and well illustrated.

It should be axiomatic that no contraceptive preparation should be made by a "fly-by-night" company, without research facilities to guide them in the manufacture of a product upon which happiness, health, and even life may depend.

A tabular analysis of the various methods is given in Table I.

Those methods which do not require any chemical or mechanical aid ("rhythm" or "safe period," premature withdrawal, and abstinence) are incompatible with the *happy* married life of *normally-sexed* individuals. The first method forbids intercourse for periods up to weeks at a time; the second forbids its complete and enjoyable climax; the third can hardly be classified as a method.

Hartman says, "If a woman of proved fertility successfully avoids pregnancy, she has demonstrated the efficacy of whatever method she is using. I should lay more stress on the testimony of the sexually satisfied multipara, who has no further

pregnancies, than upon that of the woman who has failed."

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Proteins and Amino-Acids in Allergy

By

C. S. Bucher, M.D., Champaign, Ill.

The purely physical part of man's life (by no means the most important part), with which physiology, organic pathology, drug therapeutics, and surgery deal, consists of the sum of the chemical reactions that occur in his body between birth and death—and yet many physicians consider physiologic chemistry a "dry subject"!

Dr. Bucher here discusses, in a practical way, some phases of body chemistry that are by no means widely understood, but are highly important.

TODAY we consider native proteins and their incompletely hydrolyzed products as the principal activating agents in the production of allergic manifestations.

Structure and Reactions of Proteins

Proteins constitute an essential part of plant and animal tissue. In their biologic and chemical arrangements, it is possible that there are 39×10^{30}, or 39,000,000,000,000,000,000,000,000,000 (39 octillion) different kinds of proteins. For comparison,

Some Figures for Comparison	
Distance to the Sun ——→	93000000—miles (8 light-minutes)
Federal Public Debt ——→	$50000000000
Distance to the Dog Star ——→	6862046000000-miles(solar-years)
Kinds of Proteins ——→	39000000000000000000000000000

if each protein were a two-inch cube, using one of each kind, there would be sufficient to pave the entire western hemisphere nearly four times.

The manufacture of allergens from all these proteins is a physical impossibility. Chemically, proteins are very complex organic molecules containing carbon, hydrogen, nitrogen, sulphur, etc. Those having an amine group on one end and a carboxylic acid group on the other are amphoteric, thus allowing them to act either as an acid or a base, depending upon the conditions of their environment.

Among the inconceivably large number of proteins are types that are toxic to the lower animals and man alike; others are toxic to one species and not to other species; while still others are toxic only to certain individuals of a given species. These variations are due to differences in proteins, species, and individuals. Fortunately, the number of individual kinds of proteins that are toxic to the normal man is a very small percentage of the aggregate; those contained in poisonous plants, products of bacteria, and insect and reptile venoms, are outstanding.

In the study of allergy, we deal with those proteins which are toxic to a small percent of our species, this toxic or allergenic effect being due to an inherent abnormality of the individual, who responds in an unusual manner to foods, inhalants, and contacts, containing proteins to which the average individual of the same species does not react in an allergic manner.

When digested, proteins are converted into amino-acids, thus losing their protein character and, simultaneously, their toxic properties. To date, 22 amino-acids have been discovered, 9 or 10 of which are essential to life and growth. Amino-acids, being cell food, are non-antigentic, non-toxic, non-allergenic; therefore, they cannot produce toxic or allergic manifestations, so that food allergy is the result of *unhydrolyzed* proteins, the individual being susceptible to the particular kind of protein which he does not digest. This may be the result of low digestive functions in the individual, of rapid absorption, or of both.

Digestion and Allergy

According to the variations in their digestibility, proteins may be classified into three groups:

1.—Very easily digested, or non-allergenic.

2.—Less easily digested, or allergenic.

3.—Indigestible, or non-allergenic in one individual or species; may be allergenic in another individual or species.

In the first group, proteins are so easily digested that they are split up before they can produce allergic manifestations, and therefore some workers believe that these proteins do not possess allergenic properties. If not, why not? I believe that they do possess allergenic properties and would produce allergic manifestations if it were not for the ease and rapidity of their digestion.

Gelatin is the only protein, so far as we know, that does not produce allergic reactions. When it is ingested, it is very quickly broken down to proteoses, peptones, and finally to amino-acids, so that we are not dealing with the gelatin molecule, but rather with the broken-down products of gelatin, which are not allergenic. Moreover, gelatin has been given intravenously without producing the deleterious effects which follow intravenous injections of other foreign proteins. In this case its digestion takes place in the blood stream, by means of **serum enzymes.**

In the second group, which is very large, are included proteins which are capable of producing al-

lergic manifestations in the *allergically abnormal individual.* These proteins have the properties of being soluble in the body and less easily digested or hydrolyzed than those of the former group. Their sources are many. They are found in nearly all foods, plants, pollens, animal emanations, feathers, hair, bacteria, fungi, mould, etc. and in many chemicals.

In the third group we classify all proteins that are not digested or soluble in the body of the original host. Some of these are eliminated in the native state while others may be partly hydrolyzed. These proteins are eliminated through the milk, as globulins, and may produce allergy in the individual who consumes the milk. Thus the protein, containing its allergenic property, may pass through the first host (mother, cow, goat, etc.) without change or producing allergy, while if the second host (baby, child, or adult) is susceptible to the original protein, allergic reactions result.

Heating or cooking changes the digestibility of proteins[1], and also the allergenic properties. When a protein is rendered less resistant to digestion, it becomes less allergenic, and vice-versa. This relationship does not always hold true between digestibility brought about by heating proteins and their nutritive value.[2] Navy beans and soy bean proteins are rendered more easily digestible[3] and less allergenic by being subjected to heating processes. Today, soy beans constitute the protein portion of some of the prepared products for infant feeding, which are valuable in the feeding of infants allergic to milk. When subjected to dry heat at 150°C. for half an hour, casein retains its digestibility, but loses its nutritive value. Histidine and lysine (amino-acids) are rendered unavailable. Milk processed by condensation becomes slightly less allergenic.

Proteins in the Gastro-Intestinal Tract

In the normal individual, digestible proteins in the gastro-intestinal tract are broken down into the various amino-acids. In this form they are absorbed and carried to the tissues. Easily digestible proteins (Group 1) do not come in contact with the gastric or intestinal mucosa as proteins, or, if at all, only momentarily. This contact is prevented because the villi of the mucosa are studded with active secreting glands, aided by abundant active enzymes secreted by the pancreas, which produce a chemical coating containing proteolytic, amylolytic, and lipolytic enzymes. The moment digestible proteins come in contact with the physiologically active enzymes, they are acted upon, converting them into proteoses, peptones, and finally into amino-acids.

In the allergic individual, due to abnormally low secretion of active enzymes, proteins may come in contact with the gastro-intestinal mucosa for an abnormal length of time before being digested, and may produce allergic manifestations, either locally or remotely, by stimulating or depressing the autonomic nerve endings.

Absorption of Proteins

Attempts have been made to demonstrate the passage of the undigested proteins through the normal gastro-intestinal wall and their presence in the circulation. That proteins are absorbed in the form of individual amino-acids is demonstrated by an increase in the amino-acid content of the plasma, and more especially of the red corpuscles, after a meal containing proteins. In the past, several investigators were of the opinion (and some of them still are), that undigested proteins or allergens are not absorbed through the normal gastro-intestinal wall, and that, when such absorption does occur, it is because abnormal physiologic or pathologic conditions exist. Experimentally, dialyzing membranes have been employed for this purpose, but since they are dead tissue, void of active secreting glands and enzymes, they are of little or no value in determining the passage of proteins through the normal, active gastro-intestinal wall.

Straus and Walzer,[4] in attempting to demonstrate that proteins are absorbed through the normal digestive tract, passively sensitized patches of monkeys' skin with human reactive serum, after which allergenic food was fed to the monkeys. The skin's sensitive sites reacted positively. This they considered as evidence that food allergens are absorbed through the gastro-intestinal wall and enter the circulation.

In a study of 40 cases of gastro-intestinal diseases in human beings, Walzer and Gray,[5] employing similar technics, found that the rate of absorption of undigested or allergenic properties of peanut protein, administered orally, was directly influenced by the degree of **gastric acidity.** The average time, in four groups, was: 11.7 minutes in anacidity; 15.9 in hypo-acidity; 18.7 in normal acidity and 27.5 minutes in hyper-acidity.

The same authors, in another series of 31 cases of various organic and functional disturbances of the gastro-intestinal tract, found that the interval between the introduction of the peanut meal in the rectum and the appearance of the erythema at the sensitized site, in 5 cases with a normal gastric *p*H, was 18.6 minutes; 13 cases with hyper-acidity, 21.4; and in 13 with hypo-acidity, 16.8 minutes. In another series of 14 cases, 6 had a normal *p*H; 4 had hyper-acidity; and 4 had hypo-acidity. The interval from the time of administering the meal orally to the reaction averaged 24.3 minutes; when administered in the duodenum, 18.16; and when given in the rectum, 18.7 minutes. The variation in the latter group was from 9 to 28 minutes. A delayed rise in the free hydrochloric acid value is common after the use of an antigenic food which has greatly lowered or inhibited the free hydrochloric acid response.

These findings suggest the significance of gastric acidity and the practical value of gastric analysis. The maintenance of a high gastric acidity, which retards absorption, gives more time for converting proteins into their constituent amino-acids, and thereby prevents or minimizes allergic reactions from this source. From this work and that of others, it would seem reasonable to believe that allergens do pass the normal gastro-intestinal wall and enter the circulation in sufficient quantity to be of clinical significance.

Source of the Allergenic Stimulus

Viewing this subject from another angle, we may ask, is the reaction of the previously hypersensitized skin due to specific proteins actually being carried to the hypersensitive area, or is the skin responding to the autonomic nervous system, which receives specific stimuli to the nerve endings in the gastro-intestinal mucosa, the impulse being carried to the specific hypersensitive skin area, the protein not being absorbed?

In support of the theory that the latter may be the case, I need only mention the relief experienced by the patient suffering with status asthmaticus, following sympathectomy of the dorsal nerves, or alcohol block of the ganglion, or block in the neural canal. This demonstrates that the stimuli, in the main part, are from without the lungs. If they were entirely or chiefly from within the lungs, this proce-

dure would fail to relieve the patient.

We of today are inclined to look only to laboratory research, overlooking valuable clinical evidence. To this accusation I plead guilty, having searched the literature for unquestionable laboratory proof of the absorption of unhydrolyzed proteins, and having contemplated research along this line, overlooked entirely the fact that snake root (cimicifuga), when ingested by the cow without harming her, is secreted in her milk, which may contain sufficient toxic proteins (Group 3) to cause extreme illness and even death when ingested by human beings. These toxins are contained in and are a part of certain protein molecules or globulins which, not being hydrolyzed in the cow, are secreted in her milk and excreted in the original form, or not sufficiently hydrolyzed to lose their toxic properties. Most of us who have practiced medicine for a decade can recall similar instances with other toxic or allergenic foods in mother's, cow's, or goat's milk. If the offending substance is hydrolyzed or digested, its toxic properties are lost in the process.

In the normal individual, the absorption of native proteins constitutes a very small part of the entire protein intake. In allergy, the indications are that a different condition exists. Here the absorption of an excess of proteins is due to abnormalities in the powers of the individual to hydrolyze and to retain them in the gastro-intestinal tract until hydrolysis is completed. Clinical investigations and tests indicate that, *in the abnormal person*, easily digested proteins of Group 2 are completely digested before leaving the gastro-intestinal tract, while less-easily-digested proteins may pass into the circulation unchanged, partly digested or hydrolyzed, but not sufficiently to lose their allergenic properties. They are, therefore, capable of producing allergic manifestations.

Soluble proteins entering the circulation in the process of digestion may be further acted upon by serum enzymes, and finally reduced to amino-acids; but in the allergic patient, and particularly in food allergy, there is usually a marked decrease of serum enzymes, so that serum digestion is extremely feeble or may be absent and the absence or deficiency of the enzymes in the digestive tract is not compensated.

Proteins in Food Allergy

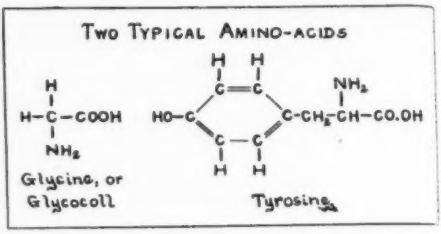
That proteins are the principal activating agents in food allergy has long been recognized. If an individual develops allergic manifestation (asthma, vomiting, etc.) in less than 15 minutes after ingesting foods to which he or she is susceptible, this is strong evidence that the allergens have come in contact with the autonomic nerve endings in the gastro-intestinal wall, since 15.9 minutes are required for absorption of protein allergens in hypoacidity. If 18 minutes or more elapse after taking food, before occurrence of symptoms, I believe that the reaction may be due to absorbed allergens, or to unabsorbed allergens coming in contact with the gastro-intestinal nerve endings, or both.

In pure food allergy, there is a deviation from the normal in the digestion or hydrolysis of proteins in the gastro-intestinal tract or blood stream of the patient, or both. If this were not so, *food* allergy could not occur.

The normal respiratory tract and conjunctiva do not possess the powers of digestion that are present in the normal gastro-intestinal tract, therefore, normally, the former structures are less resistant to invading proteins than the latter. When this resistance is further reduced by diminution of the serum or cell enzymes, with a corresponding decrease in hydrolysis of proteins, individuals so afflicted are potential sufferers from allergic conjunctivitis, rhinitis, angioneurotic edema, sinusitis, hayfever, and asthma, with all the accompanying symptoms. *Proteins*, containing their allergenic properties, must necessarily come into contact with autonomic nerve endings, the shock tissue, or both. Amino-acids cannot produce allergic manifestations.

Amino-Acids As Life Factors

Amino-acids are organic acids in which one of the hydrogen atoms has been replaced by NH_2, and are products of the hydrolysis of proteins, but they are more than this. These compounds have been



designated as the building stones of protoplasm. It is assumed that they provide, in combination, the reaction basis of living. As so aptly stated by Hammett:

> "It follows that the emphasis of the older point of view on the architectural significance of these compounds, as exemplified in their designation of building blocks, can well be shifted to the point of view of their significance as actual determining particles of living. They are not inert components of the framework within which life takes place; they are active contributors to life itself."

Life cannot exist without amino-acids. They are deaminized into living proteins in the cells. Corn protein is hydrolyzed into amino-acid in the hen, and then deaminized into egg proteins. When the egg is consumed by a human being, the proteins of the egg, by enzymic action, are rehydrolyzed into amino-acids, and as such are carried to the cells, where they are again deaminized into proteins—this time living human proteins, or protoplasm. A protein hydrolyzed into amino-acids, then deaminized into protein, constitutes a cycle, with a change in the kind of protein. That this cycle may continue indefinitely is obvious.

Many chemical changes are involved, and as many enzymes, in the process of hydrolysis of proteins. Some of these changes are so fleeting that they have eluded the ability of the chemist to catch and definitely determine those changes. The exact point in the process of hydrolysis where a protein loses its toxicity is not known.

Summary

Proteins are complex molecules, capable of acting as acids or bases.

Toxins are contained in, and are a part of, certain proteins; but when completely digested or hydrolyzed, proteins lose their identity, and also their toxicity, and are converted into amino-acids. What happens to the toxins we do not know.

A protein may be toxic to one species or to certain individuals of a given species and not to another species or individual of the same species.

The allergenic properties of some proteins are slightly changed by heat.

The normal gastro-intestinal mucosa is coated

with active enzymes, capable of hydrolyzing proteins, carbohydrates, and fats. Allergy is prevented by the rapid and complete hydrolysis of proteins.

Native proteins or partly hydrolyzed products of protein digestion may produce allergic reactions, locally or remotely, by stimuli to the shock tissue or through the autonomic nervous system.

That native proteins or their incompletely hydrolyzed products are absorbed, there can be no doubt, as demonstrated when human beings consume the milk from a cow that has previously eaten snakeroot.

Proteins that gain entrance into the circulation, as proteins or partly hydrolyzed, are further acted upon by serum enzymes.

Amino-acids are the end products of protein hydrolysis and are cell foods, therefore are non-allergenic.

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The Hereditability of Diabetes

By

W. B. PALMER, M.D., Furman, Ala.

Too few physicians pay adequate attention to the family history. Dr. Palmer shows how a real and complete history may unearth material of real scientific and prophylactic value.

DISEASES may be hereditary (generally as tendencies) or acquired. We have made great advances in our knowledge and conquest of acquired diseases, but hereditary factors may play a more important part in the course of acquired diseases than we now suspect.

It has been my custom to begin, at the first visit, a medical history of every person who came to me professionally, no matter how trivial the ailment seemed to be. Many subsequent visits, for various conditions, were frequently necessary to get a satisfactory record, provided no necessity for an immediate and complete examination existed. Even in trivial cases the name, address, and specimens of urine and blood were obtained. One has to be conscientious and not charge for such apparently unnecessary service, but only for the minor condition for which the person came, such as the dressing of an injured finger, but the additional effort pays dividends, in the long run.

I keep two kinds of records, one consisting of a medical history of each patient, and the other a genealogic record, which is a mere catalogue of names, arranged in chronological order somewhat after the method of genealogists. Such a genealogic history is obtained, with discretion, from many sources. All histories are held in strictest confidence, and are so arranged that they cannot be interpreted by any other than myself, for only code names, beginning with the same letters as the real names, appear on the records. The alphabetic order is followed. Separate volumes hold the code names alongside the real names.

To prove the helpfulness of this dual system of keeping records, as far as hereditary diseases or tendencies are concerned, the following family record is offered:

Family History

Two pure Negroes, of whom I have no medical records, were married and had 12 children—7 boys and 5 girls. After the death of the wife, the man married again and begot 2 sons. All children were of average mentality and were industrious. The males were of normal height and weight; the females, short and obese. All females died from the sequelae of diabetes, becoming extremely emaciated before death. One died from an amputation above the left knee, found necessary on account of the development of diabetic gangrene. In the remainder of this article the word diabetes will include the sequelae.

Of these five women I have medical histories of all of the descendants of one, who married and bore 3 sons and 2 daughters, all normal in height and weight. One son is living, with no glycosuria or hyperglycemia. Another son, of whom I have no medical history, died suddenly, in the prime of life. The third son and both daughters died from diabetes.

Of the nine sons of the original ancestors, only four, by the first marriage, were examined by me, including urine and blood tests. Of the four tested, two died from diabetes and two showed no evidence of the disease. The two sons by the second marriage of the original male ancestor were never examined by me, but I have examined some of the descendants of one. He had 6 children—3 sons and 3 daughters. One of the sons, normal in height and weight, died from diabetes. The other 2 sons (twins) died suddenly, in the prime of life, never having been examined by me. One of the daughters, who was short and normal in weight, died suddenly and left some children, one of whom is living—a tall, obese person who has severe hypertension, but I cannot report on diabetes. Another of the daughters is of normal height and weight and has children, one of whom I have examined. She is short, obese, has severe diabetes with all of the dangerous sequelae, and is childless.

After the first World War many of the descen-

dants of the original fourteen children scattered widely, some going as far as Detroit, Michigan, but I have the names and addresses of every member of the family on my records. There is only one living diabetic among this family, of those I have examined. Their offspring have not been numerous.

It seems certain that the original male ancestor and his first wife had diabetes, either actively or

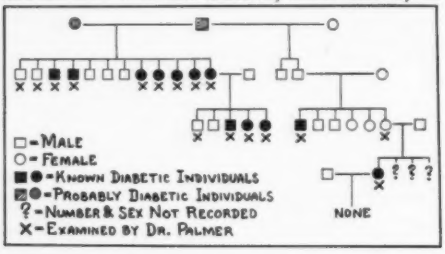


Fig. 1:—Mendelian chart of the family reported.

in a recessive form, for both families included diabetic individuals, but there were many more in the first family (see Fig 1).

Discussion

It is conceded that the pituitary is the master gland of the body. Collip and others have shown that the anterior lobe extracts of this gland have fifteen physiologic effects, although there is a possibility of the existence of only two or three hormones, as only two or three types of cells are present. One of these hormones or extracts has a specific stimulation on body growth; another a diabetogenic effect; and it is not unreasonable to assume that the primary cause of true diabetes also originates there. Experiments by capable investigators apparently sustain this view.

An excessive intake of calories does not seem to be the sole cause of obesity or diabetes, and it may ultimately be proved, by a study of many family histories, that the primary cause of diabetes is in some alteration of the chromosomes of some ancestor; the secondary cause, in the pituitary; and the tertiary cause, in the pancreas. This does not exclude the interaction of other glands and of the nervous system. The autonomic nervous system and its relation to the pituitary and other glands may be the explanation of the benefits derived from psychotherapy, with its almost boundless variations. Much of the success of our profession may emanate from this source.

Radium, used on the eggs of the fruit-fly, makes changes in the chromosomes that ever afterwards breed true to the changed type, and it seemed to me that some other agency produced changes in this original human pair, that afterwards bred true to type and to the laws of heredity, so I consulted one of the most famous biologists of this country and here is his reply:

> "Variations, in the sense of difference in the characteristics of individuals, arise mainly through the method of distribution of the chromosomes and their constituent parts from parent to offspring; but I presume that you are referring to changes in the constitution and characteristics arising from other causes, such as result in evolution.
>
> "Something is known as to the production of such changes by the action of radium on the chromosomes, although most or all of such changes that are known result in injury to the offspring. As to how progressive evolutionary changes arise, it seems to me that nothing is known in a scientific way. If, in some way, a part of a chromosome that influences one lobe of a pituitary and not the other could be altered, that might well alter that particular lobe, and consequently it would (or might) alter the development of all the numerous parts of the body affected by the hormone of that lobe. This general method of action must be common in development. Altering a particular lobe (or a gene) of a chromosome alters all the parts and functions of the body that are influenced by that part of the chromosome."

After reading the reply of this distinguished scientist, I have concluded that the truth can be obtained only by some method of voluntary (not State) cooperation among medical men in the study of family histories. Here seems to be an impregnable barrier, stressed in an editorial in Clinical Medicine (March, 1941, page 63): "Personal matters discussed with a physician in his professional capacity, like those revealed to a priest, in his confessional, are invariably confidential."

Ethics is more than a code of rules for the guidance of physicians in their contests for the prizes of life with their fellow practitioners. Ethics upholds the rights, as well as the welfare, of *patients* above all else. The relief of suffering humanity is the only justification for the practice of medicine.

AN AMERICAN'S CREED

I believe in the United States of America as a government of the people, by the people, for the people; whose just powers are derived from the consent of the governed; a democracy in a Republic; a sovereign Nation of many sovereign states; a perfect Union, one and inseparable; established upon those principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes. I therefore believe it is my duty to my Country to love it; to support its Constitution; to obey its laws; to respect its flag; and to defend it against all enemies.—William Tylor Page.

SECURITY

The only real security that a man can have in this world is a reserve of knowledge, experience, and ability.—Henry Ford, *in* Think.

Obstetric and Gynecologic Problems*

(A Seminar)

Conducted by
A. W. DIDDLE, M.D., Iowa City, Iowa

Here is a thoroughly practical conference discussion of the kind of problems met by all who work in obstetrics and gynecology, which should be decidely helpful.

WE WILL consider a series of obstetric and gynecologic cases, with questions and discussion upon them.

Case 1:—A primipara, age 27, had been in good health during her pregnancy, and entered the hospital immediately after the onset of labor pains, which continued for 6 hours, at the end of which the cervix was dilated to 5 cm.

During the two days following, no pains occurred, a diagnosis of *uterine inertia* was made, and she was given the usual treatment—full diet, fluids, and sedatives.

At the end of 84 hours, the cervix was dilated to 7 cm.; the occiput was presenting posteriorly; the pulse remained persistently at 100 and above. I feel that *a persistent tachycardia of 100 or faster is an indication for intervention before fever appears.*

Dr. L.: Would small doses of pituitrin have been effective in stimulating this uterus?

Dr. Diddle: One minim of pituitrin was ineffective. After several days in labor, the uterus becomes tetanic; pituitrin in larger doses would have ruptured this uterus.

Dr. Z.: Why could not manual dilatation have been done, if the cervix was dilated up to 7 cm.?

Dr. Diddle: The cervix was edematous and very friable. Such a cervix tears rather than dilates. Duhrssen's incisions were used; that is, the cervix was incised at points related as 10, 2, and 6 o'clock. No incision should be made in the anterior wall of the cervix, because of the proximity of the bladder; no lateral incision, because of possible extension into the uterine vessels. Such incisions are dangerous if definite fever has developed (see case 4).

After the three incisions were made, the head was rotated to an occiput-anterior presentation and extracted with forceps.

Late Puerperal Fever

Case 2:—A multipara of 35 years delivered spontaneously after 8 hours of normal labor. On the tenth postpartum day she had a chill, followed by fever of 105°F. The patient had a chill every day for 5 days, but felt well and ate well.

No pathologic change was found on examining the throat, lungs, and pelvic organs. Blood culture, urine examinations, and blood smears were normal.

Diagnosis: Probable pelvic thrombophlebitis.

Treatment: Rest in bed, full diet, and sulfanilamide were ordered, but the drug proved ineffective in controlling the fever and was discontinued. The fever decreased by lysis, and complete recovery followed.

Dr. G.: Was there any evidence of thrombophlebitis in the femoral vein? We were taught that pelvic thrombosis extended, by continuity, into the femoral vein and resulted in the typical edematous or "milk" leg.

Dr. Diddle: Although it is true that thrombosis may extend in such a manner, it is not necessarily constant. The diagnosis in this type of case is made by the exclusion of other causes of fever during the puerperium. No edema or palpable thromboses were present in either leg.

Retained Placenta

Case 3:—A woman of 38 years, who had had two normal pregnancies previously, entered the hospital 3 days after spontaneous rupture of the membranes. The fetus was at full term and apparently in good condition.

After a hospital stay of one week, labor began and persisted for 36 hours. At the end of the first stage (complete dilatation of the cervix), she had a chill and her fever shot up to 104°F. She delivered spontaneously one hour later, while still having chills and fever.

Gentle pressure over the uterus did not cause expulsion of the placenta, and the question arose of (1) performing vigorous Credé expression of the placenta; or (2) manual removal, if expression failed; or (3) awaiting spontaneous expulsion.

It was felt that, at the end of 10 days, a leukocytic protective wall had formed around the placenta and that vigorous interference of any type would only spread infection. At the end of 8 hours, she delivered the placenta spontaneously. She was well and without fever the next day, and went through a normal puerperium.

Case 4:—A primipara of 20 years, at full term, had been in labor for 6 hours when she entered the hospital. Twelve hours later, fever appeared which did not respond to the intravenous use of fluids. At this time, the cervix being dilated to 8 cm. and the head in mid-pelvis, chills occurred and a fever of 103°F. followed. Pains stopped at the end of 35 hours of labor, after fever had been present for 10 hours.

Forceps delivery was carried out, after the cervix had been incised on the left. The next day her temperature was 105°F. and a tender mass, apparently an abscess, gradually developed in the left lower quadrant.

We do not light up an intrapartum infection by uterine incision or manipulation now. We advise waiting until the cervix is fully dilated, and the application of forceps only if the head is at the bony outlet.

Treatment: This patient was given sulfanilamide (20 grains—1.3 Gm.—every 4 hours, day and night) for 5 days. Her fever decreased to 102°F. On the fifth day of sulfanilamide therapy, her fever suddenly jumped to 103.5°F. The drug was stopped at once and the fever entirely disappeared

*Presented during a postgraduate course at the University of Iowa, in December 1940, by the Department of Obstetrics and Gynecology. Abstracts by R. L. G.

—a typical example of *drug fever*. Opium was needed to control diarrhea.

Fever

Case 5:—A primipara of 19 began to complain of bilateral lumbar pain when 9 months pregnant. Fever developed with the onset of labor and a catheterized specimen of urine showed a large amount of pus. A diagnosis of pyelitis was made (it is never made unless the patient complains of back pain) and 4,000 cc. of fluid were given each day. Sixty (60) grains (4 Gm.) of sodium bicarbonate were given in one day, and acidifying doses of sodium acid phosphate the next day. The patient excreted only from 2,500 to 3,000 cc. of urine daily.

The temperature rose to 103°F. or higher and then fell to 97°F., each day. When the fever was gone, however, the patient did not feel better but looked very ill, almost "dead." *Such a sign indicates that a ureter is blocked.*

Ureteral catheters were inserted through a cystoscope, a blocked ureter was found, and the patient rapidly recovered.

Pyelitis of Pregnancy

We do not make a diagnosis of pyelitis of pregnancy unless the patient complains of pain in the back. Pus in the urine of a pregnant woman, and especially in a noncatheterized specimen, does not necessitate a diagnosis of pyelitis.

Treatment: The simplest treatment, and that used first, is alternate alkalinization and acidification of the urine. Large amounts of fluid are given, with 80 grains (4.6 Gm.) of sodium bicarbonate daily, until the urine becomes alkaline. After 4 days, sodium acid phosphate is given until the urine becomes acid.

Infections not responding to this simple treatment are given sulfanilamide, which is effective in all cases except those caused by a *proteus infection*, for which mandelic acid, in tablet form, is employed.

For those not responding to such therapy, the best treatment is ureteral catheterization. It is now known that the ureters of most pregnant women are markedly dilated, and infection in the urinary tract follows in the wake of poor drainage. This dilatation is not obstructive, but atonic, and is not reduced by leaving ureteral catheters in place, as is true obstructive ureteral dilatation. After delivery, the ureters return to normal size without treatment.

Toxemia and Hypertension

True Toxemia	*Hypertensive vascular disease*
Onset late in pregnancy	Onset early in pregnancy
Sudden onset	Gradual onset
Hypertension appears late	Hypertension appears early
Hypertension disappears by 10th postpartum day	Hypertension slightly lowered after delivery; never disappears
Primiparas more commonly affected	Multiparas more commonly affected
Convulsions common	Convulsions uncommon

Only recently have we become aware of the importance of differentiating between these groups. The *hypertensive vascular disease patient does not return to normal after delivery; rather,* her blood pressure gradually decreases and then levels out at an abnormally high level. Examination of her retina shows spasm of the arteries, and later, hemorrhages. This woman *should not become pregnant again;* sterilization is often indicated.

The true toxemic patient is apparently but little harmed by the pregnancy and does not have persisting hypertension.

Breech Presentations

Whenever possible, a breech presentation should be changed to a vertex presentation by external version. The head is kept flexed and pushed into the pelvis by the shortest route. An anesthetic should not be used, as rupture of the uterus has occurred when the patient was under anesthesia.

The advantages of external version are: (1) lowered fetal mortality rate; (2) easy determination of the proportion of the head to the pelvis; and (3) less injury to the cervix. The *disadvantages* are: (1) possible injury to the umbilical cord; and (2) premature separation of the placenta. Both complications are very rare, if undue force is not used.

If a breech presentation is permitted to come to labor, the physician must be sure that the pelvis is large enough to allow a full-sized head to pass through, or a cesarean section should be planned for.

Visiting physician: What would be your method of handling a primipara with a slightly contracted pelvis and a breech presentation?

Dr. J. A. Randall, associate professor of obstetrics: If it were a frank breech; that is, a breech presentation with the legs extended along the body, a cesarean section would be the best method of treatment.

Routine "breaking up" of the breech presentation should never be done. The lowest mortality and morbidity rates may be obtained by permitting the mother to deliver the baby up to the umbilicus before interfering. Pulling down a leg and vigorously extracting the baby seems easy, but always results in an increased rate of fetal hemorrhages into the brain.

Pernicious Vomiting

Signs of a severe case of pernicious vomiting of pregnancy are: (1) a fast pulse; (2) fever; and (3) jaundice.

Treatment: Mild cases will respond to any treatment, or none at all. For this reason, corpus luteum and other hypodermic medications have gained an undeserved reputation. Their effect is psychic, as has been proved by the use of sterile water injections, with equally effective results.

One simple treatment: Have the patient chew dry toast or dry crackers before arising in the morning, and drink no liquids until solids have been retained for several hours.

Moderate and severe cases are treated thus: (1) Nothing is given by mouth; (2) the patient is kept in bed; (3) 4,000 cc. of fluid (5-percent dextrose and physiologic saline solutions) are given each day by rectal, subcutaneous, and intravenous routes; and (4) vitamin B_1 and liver extract are given, hypodermically every day.

If the pulse rate and fever increase, a therapeutic abortion is carried out by rupturing the membranes and giving pituitrin.

If the nausea subsides, a dry diet is begun and gradually increased until a full diet is given.

The Seminar

Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussions of any or all problems. Discussions should reach this office by the 5th of the month following the appearance of the problem. Send your problems and discussions to The Seminar Dept. care CLINICAL MEDICINE, Waukegan, Ill.

Problem No. 5 (Medical)

Presented by Thomas Bryant Pope, M.D., Kingston, West Va.

(See CLIN. MED., May, 1941, p. 135)

RECAPITULATION: A sturdy, healthy woman of 51 years, safely past the menopause, suddenly developed cramping pains in the abdomen, and began to pass large, dark stools and to feel weak and faint. The family and personal history gave no hint of the cause.

Physical examination showed a woman who did not look ill and who presented no abnormal signs whatever. A *blood study* showed: Hemoglobin, 31 percent; red cells, 1,800,000; leukocytes, 4,050, with 69 percent polymorphonuclears and no abnormal cells.

On symptomatic treatment she seemed to improve, but in a few days her symptoms reappeared in exaggerated form, she went into shock, and, in spite of large transfusions and infusions, died in a few hours.

Requirements: State your tentative diagnosis, *giving reasons.* What further examinations would you have made, and what treatment would you have prescribed?

Discussion by Roy F. Courtney, M.D. Oak Creek, Colo.

The problem as presented seems to be one of intestinal disorder, with a blood picture which indicates anemia from massive hemorrhage into the lumen of the bowel. The causes could be a foreign body, malignant disease, tuberculosis, or typhoid.

The low leukocyte count suggests one of the latter two. It is hard to conceive of a patient who has such a hemorrhage (being weak and near fainting) with a normal pulse, temperature, and respiration. An atypical case of typhoid, of which there are many, could account for a slow pulse and correspondingly slow respiration, but there would be some subnormal temperature. However, in view of the fact that she was seen a week after the presumable onset, she could have an early perforation from ulceration of the bowel from a typhoid infection. I would suggest an immediate Widal test, and as soon as the patient showed some signs of improvement I believe that exploratory laparotomy is indicated. If this patient had been seen earlier, an x-ray examination of the intestine would also have been indicated.

Carcinoma of the cecum should be considered in this patient until it is definitely ruled out, by surgery, or biopsy, or x-ray study; and in view of what we have here to go on, the first thing is to *stop the hemorrhage,* if possible, and then make a definite diagnosis. An exploratory laparotomy is not amiss in such a case, and I would much rather do one and be wrong than to not do one and find I was right in my diagnosis and lose my patient.

My *diagnosis* is tentatively: *Typhoid perforation* of the terminal ileum, with massive hemorrhage into the lumen of the bowel; or *carcinoma of the cecum* with perforation into the lumen, accompanied by massive hemorrhage.

Discussion by L. E. Williams, M.D., Kansas City, Mo.

An x-ray study and a gastric analysis would be of value in helping to reach a diagnosis in this case, yet this patient seems never to have been in condition to have this work done. A blood Wassermann and a Widal test, a proctoscopic examination, repeated blood counts, and a study of the stools for *Entameba histolytica* were indicated.

Blood in the stools may be caused by many conditions which obviously need not be considered in this case. Here we are dealing with a sudden, copious intestinal hemorrhage, black and mixed with red blood, in a person previously healthy and without symptoms. The character of the hemorrhage indicates that it came from high up in the intestinal tract. Such a hemorrhage may be due to typhoid, amebiasis, leukemia, pernicious anemia, gastric cancer, gastric ulcer, or ulcer of the duodenum.

The finding of a positive Widal test or entamebae in the stools would establish the diagnosis of typhoid or amebiasis. The healthy appearance of the patient is in conformity with pernicious anemia and acute leukemia, but the blood picture is that of a severe secondary anemia. Repeated blood counts and an ophthalmoscopic examination of the eye grounds may have been of some value.

The age of the patient causes one to suspect cancer, but the history and general appearance are not what is usually found in cancer. Hemorrhage due to gastric cancer or ulcer is usually accompanied by nausea, vomiting, and hematemesis. This is also true of mesenteric thrombosis, with the added symptoms of obstruction and peritonitis.

A severe intestinal hemorrhage, coming from high up in the intestinal tract, in a person apparently healthy and without any previous warning, may be due to an *acute duodenal ulcer,* and if I must venture a diagnosis, that would be my "guess."

Discussion by George B. Lake, M.D. Waukegan, Ill.

This woman was uncommonly robust and healthy, developed symptoms suddenly, had no fever or leukocytosis (in fact, showed leukopenia),

and a careful physical examination revealed no abnormalities.

We can, therefore, eliminate all acute infectious diseases (except, possibly, typhoid); all local lower-bowel disorders, because the stools showed blood coming from higher up; all inflammatory conditions, such as colitis; all chronic diseases, such as cancer, amebiasis, and the like (except, possibly, duodenal ulcer), because this woman *had not been ill;* and all lesions due to injury, as there was no history of that sort.

Her blood picture, which, with the stools, was the only *objective* evidence available, was that of profound secondary anemia *resulting from the hemorrhage,* which would also have accounted for the leukopenia, the only possible evidence of ambulant typhoid. She was certainly far from the peptic ulcer type of person and had had no previous symptoms to suggest that diagnosis.

This leaves for consideration only a few of the rarer causes of intestinal bleeding, such as angioma or varices in the small bowel, deficiency diseases, such as scurvy or pellagra (which may be pretty well ruled out here); and the general hemorrhagic diseases (hereditary or not), such as hemophilia, hemorrhagic purpura, and the like. Antemortem diagnosis, in these cases, especially when death occures rather promptly, is difficult or impossible.

My only additional suggestion as to treatment would be that vitamin K might have been given as soon as it was evident that the severe bleeding was not due to any of the ordinary causes, nor controllable by any of the usual means. I believe I should have given it from the first examination.

Solution by Dr. Pope

Autopsy revealed an exsanguinated female, with minute hemorrhages in the mucosa of the entire digestive tract, from the esophagus to the rectum, and much free blood in the lumen of the tract. The pathologist's report was—*intestinal purpura.*

Problem No. 7 (Medical)

Presented by G. M. Russell, M.D., Billings, Mont.

A WOMAN 32 years old, came to me complaining of pain in the lower abdomen. She had been examined by a local Clinic and informed that they could do nothing for her.

She was 5 feet 6 inches tall, weighed 95 pounds, and for two years had had a "heavy sensation" immediately after eating, which continued intermittently, for three or four hours. This became worse in the summer of 1939. Sometimes she had this pain at night, when bismuth would occasionally relieve her.

Physical examination revealed nothing abnormal in the head or chest. There was tenderness over the lower abdomen. Vaginal examination was unsatisfactory, because of kraurosis of the introitus, but she gave no history of menstrual irregularity. Rectal examination revealed nothing abnormal. The red blood cells numbered 5,056,000; hemoglobin, 77 percent; gastro-intestinal roentgenograms showed only ptosis of the stomach and intestines. Gastric analysis, 15 minutes after a meal, showed no free hydrochloric acid; total acidity, 70. Gallbladder drainage showed some bile-stained, piled-up epithelia, and x-ray study of the gallbladder showed delayed emptying after the fat meal, when the viscus had been well filled with the dye.

Requirements: What is *your* diagnosis, *giving reasons,* and what treatment would you suggest?

CIVILIZATION

To be civilized is to be incapable of giving unnecessary offense, to have some quality of consideration for all who cross our path.—AGNES REPPLIER, *in* "Americans and Others."

EUROPEANS IN THE TROPICS

A man can live in any climate, if he will only adapt himself to its requirements and conditions. What kills the European in hot countries is the abuse of liquors, and the attempt to live according to the nature of his own country under another sky and another sun. We inhabitants of hot countries live well in northern Europe whenever we take the precautions the people there take. Likewise Europeans can endure the torrid zone if they will but rid themselves of their prejudices.—DR. JOSE RIZAL.

PLANNED POPULATION

We must create a society in which, at every economic level, parents who are responsible and competent will have more children than their irresponsible neighbors. That is not the sort of Society we have today.—FREDERICK OSBORN, Information Service, *May, 1941.*

OUR NEEDS

We need today inspiration, not irritation. We need education, not seduction or coercion. We need appreciation of the good that is, not an assumption that all is evil. We need faith, not hopelessness. We need stability to make and keep homes.—OWEN D. YOUNG.

Clinical Notes and Abstracts

Vaginal-Vault Application of Radium in Cervical Cancer

IT IS well known that carcinoma of the uterine cervix has a tendency to spread early into the parametrium and toward the pelvic wall. This is shown by the fact that nearly 90 percent of patients suffering from cervical cancer have growths beyond Stage I when they first report for examination, which means that the growth has already spread beyond the cervix itself; while in uterine-body cancer the disease has a tendency to remain confined to the uterus itself for a much longer period of time. This early lateral spread in cervical cancer is one of the principal reasons why surgical treatment of the condition has been virtually abandoned by the leading gynecologists all over the world.

If we are to reduce the mortality of carcinoma of the cervix uteri, due consideration must be given to this lateral spread of the neoplasm. Since radiation therapy has become the treatment par excellence for this disease, its lateral spread is best combated by heavily-filtered, external radiation from multiple portals, usually by high-voltage x-rays, and by vaginal-vault applications of radium. Suitable heavily-filtered radium applicators should be placed in the lateral vaginal fornices, in addition to those in the cervical and uterine canal and in the vaginal vault against the cervix. It is very important, in packing these applicators in place, that they be pushed as high up in the lateral fornices *and as far laterally toward the pelvic wall as possible.*

Hurdon,* of the Marie Curie Hospital, London, has recently shown that, when the parametrium is still flexible, the radium may be packed 1.5 to 2 cm. nearer to the pelvic wall by mild pressure on the applicators in the fornices as they are being packed in position. This pressure is capable of increasing the dose at the lateral pelvic wall (level of the internal os, 5 cm. from the midline) as much as 500 percent—truly a tremendous difference in the radiation effect, which may determine the success of the treatment.

Unsuccessful radiation treatment in uterine cervical cancer usually means ineffective treatment to the infiltrated parametrium and invaded parametrial glands. By pushing the radium applicators in the lateral vaginal fornices as high up *and as far out toward the pelvic wall as possible,* this may be overcome.

HAROLD SWANBERG, M.D., F.A.C.P.
Quincy, Ill.

*Hurdon, E.: Radium Treatment of Cancer of the Uterus with Reference to the Physical Measurements of the Radiations.—*A. J. Roentgenol.*, Feb., 1941.

Cells in the Stools

MICROSCOPIC examination of bowel discharges for the presence or absence of cells affords the general practitioner a very *simple, yet effective method of determining whether or not there are pathologic changes in the bowel wall. The presence of cells in the stool indicates that such changes are taking place.*

This knowledge is of especial value when following the progress of an inflammatory lesion. A decrease of cells found in the bowel discharges shows that healing is taking place, and when cells cease to appear, the physician knows that an active pathologic condition no longer exists.

The practitioner can make a differential diagnosis, when diarrhea is present, as to whether it is due to a breakdown in the intestinal wall, such as occurs in chronic ulcerative colitis, or whether it is functional or nervous in origin. When patients with diarrhea are not suffering from pathologic changes in the bowel wall, cells will be absent.—Z. BERCOVITZ, M. D., in *Ann. Int. Med.*, Feb., 1941.

The Aging Heart

ONE of the most difficult clinical problems is the diagnosis of heart disease in a patient of 60 years and older. The heart and arteries of the older person are atrophic, toughened, more dry and pigmented than those of the individual between the ages of 15 and 50, and the valves do not close so accurately, because they are rigid. The heart rate is slowed and changes in rhythm, such as premature beats, auricular fibrillation, or heart block may appear.

Physical examination: The heart is usually not enlarged, the rate is slow, the sounds are often less loud, and frequently no murmurs are present. The blood pressure is usually normal or low.

Roentgenographic study: The heart is normal in size or small (atrophy of the heart begins about the age of 60 or 65) is more horizontal in position, and the aorta is one-fifth larger than it is in youth.

Electrocardiographic study: No consistent changes have been found in electrocardiograms. I have electrocardiograms made from a normal girl of 18

and a normal man of 97 and they appear identical.

Diagnosis: The history is the most important diagnostic step. Angina pectoris, with an atypical history, or early signs of congestive failure should be sought. *Can the individual do his customary work without symptoms?* Slow recuperation after a strain may be the first sign of physical deterioration.—H. B. SPRAGUE, M. D., in *Med. Ann. Dist. Col.*, Feb., 1941.

Medical Illustrations

PICTURES are becoming more and more important in all sorts of teaching, including that of medicine, so CLINICAL MEDICINE is rather specializing in that sort of thing.

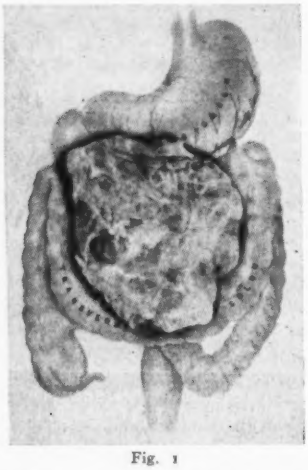


Fig. 1

Photographers are getting so clever, and their apparatus so efficient and flexible, that Wilbur Lown, of the forthcoming School of Medical Illustration, in Boston, declares that he can photograph anything a doctor can see.

As a specimen of how the artist can assist the photographer in making anatomic relations clear, we offer the accompanying picture (Fig. 1, taken from *Patchwork* for May-June, 1941), showing a photograph of an abdominal tumor, whose orientation has been skillfully sketched in by an artist, thus adding materially to its teaching value.—EDITOR.

Postpartum Sterilization

THERE are several important reasons for doing postpartum sterilizations: The procedure, in the puerperium, is accomplished with a minimum amount of surgical trauma, due to the fact that the postpartum uterus is easily approached through a small midline abdominal incision with the least amount of manipulation, which lowers postoperative morbidity, as compared to the more extensive operations required after the uterus returns to its normal size deep in the pelvis; the postpartum operation lowers the medical cost to the patient; the patient is delivered and is sterilized during one hospital stay which is no longer than the average obstetric sojourn in a hospital.

The *Madlener technic* has been used because of its simplicity, which made it adaptable to postpartum sterilization. It is simply picking up a loop of the fallopian tube at about its midportion; gently crushing the two limbs, including a small portion of the mesosalpinx; and placing a silk ligature around the crushed area. That is all that is done.

Postoperative pain has been negligible. Morphine postoperatively was necessary in only a few instances. It was observed that the need of morphine was in proportion to the amount of abdominal-wall retraction during operation. There have been no known complications in this series.

No known pregnancies or complications have occurred in a series of 23 cases, for a two-year period.—M. A. BRENNECKE, M. D., in *Human Fertility*, Feb. 1, 1941.

Ivy Poisoning

TO prevent ivy poisoning, workers at the National Health Institute recommend that those who are going into the woods or fields should first thoroughly rub into the exposed parts of the skin a vanishing cream containing 10 percent of *sodium perborate*. If one is to be out all day, the cream should be washed off with soap and water and fresh cream applied every 4 hours.

In treatment of *known* cases of rhus dermatitis, good results have been obtained by washing the affected parts with alcohol, and then applying a 10-percent solution of tannic acid in water. Laymen should not try this, as they might mistake the diagnosis.—*Science News Letter*, May 24, 1941.

"Hyperacidity" During Pregnancy

THE pregnant patient often complains of "heartburn." This symptom is the result of gastric regurgitation into the esophagus. *Such patients should not be allowed to take sodium bicarbonate* indefinitely, as sodium causes water to become stored in the body and may result in toxemia.

Gastric analyses have shown that the gastric acidity during pregnancy is always *lower* than normal, especially during the last 3 months.

Treatment: Small doses of phenobarbital—¼ grain (16 mg.)—and atropine—1/500 grain (0.13 mg.)—are of value. Certain cases do well on small doses of dilute hydrochloric acid, taken before meals. Gastric ulcer is a true rarity during pregnancy.—A. W. DIDDLE, M.D., before a postgraduate course in obstetrics, Iowa University, Dec. 16-21, 1940.

Treatment of Acne

A low-fat diet is the first requisite in treating acne vulgaris, as it is a metabolic disease due to the patient's inability to break down lipoids.

Diet: All fatty foods should be forbidden, but bread and cakes made with little butter or lard, cereals, lean meat, fish, or fowl once a day, all vegetables and fruits, sugar, preserves, jam, jelly, honey, molasses, and candy made of sugar (not of butter, nuts, or chocolate) may be eaten. No alcohol should be allowed; tobacco may be used freely; coffee, tea, and coca-cola are restricted to two cupfuls a day of any *one* of them. In the

rosacea and xanthoma-like types, carrot, pumpkin, squash, sweet potato, spinach, yellow corn, and catsup should not be used.

Thyroid extract is given to the point of tolerance, without regard to the basal metabolic rate or blood chemistry examinations, remembering that coffee, in excessive amounts, often masks some of the symptoms of hypothyroidism. In chronically fatigued, thin, worried patients, sleep is improved, the nervousness lessens and there is a gain in weight and appetite. Desiccated whole thyroid gland substance is given, in 2-grain doses each day, and increased to just less than the amount which produces palpitation, sweating, or other symptoms.

Local therapy: Use any nonmedicated soap, with tepid water, for cleansing. Blackheads are removed carefully, without squeezing. Pustules are opened just widely and deeply enough to let out the contents, and are compressed by stretching rather than squeezing.—R. L. SUTTON, M.D., in *J. Missouri M. A.*, Feb., 1941.

Trichinosis

TRICHINOSIS appears to be frequently overlooked. In Illinois, in 9 years (1931 to 1939), only 94 cases were reported. In a recent U. S. Public Health Service study of 3,000 routine autopsies, 488 of the bodies were found infested with trichinae. Research is now in progress on specific methods of diagnosis.

At present there is no practical method for detecting the presence of trichinae in hogs slaughtered for food, but the consumer can protect himself by seeing that all pork eaten is *thoroughly cooked.* Fresh pork should be cooked, in the oven, at 185°F., for from 30 to 35 minutes per pound; smoked pork (ham) at 170°F. for from 20 to 30 minutes per pound; pork chops (in the frying pan), 3/4 inch thick, 10 to 15 minutes; 1 inch thick, 12 to 17 minutes; 2 inches thick, 22 to 27 minutes.—Illinois Dept. of Public Health.

Nephrectomy in Hypertension

CASE reports are now appearing in the literature of patients who are being cured of malignant hypertension by unilateral nephrectomy or removal of a urinary tract obstruction.

Cases of chronic pyelonephritis with atrophy are consistently benefited by removal of the small, shrunken kidney. Workers at the Mayo Clinic emphasize the fact that the kidney may be little smaller than normal, so that sharp roentgenograms and interpretation by an expert are in order.

Nesbit and Ratliff,[1] at the University of Michigan, report that urinary tract obstruction may cause hypertension, and that removal of the obstruction or of a hopelessly damaged kidney is followed by sharp decreases in blood pressure.

Fish[2] feels that *every patient with high blood pressure for which no adequate cause can be found, should be studied thoroughly for pyelonephritis and urinary tract obstruction.* As the results are best in those patients who have had hypertension for 2 years or less, such study should not be delayed.

1. Nesbit, Reed, and Ratliff, Rigdon: Hypertension Associated with Unilateral Renal Disease. *J.A.M.A.*, 116: 194 (Jan. 18), 1941.
2. Fish, G. W.: Nephrectomy in Hypertension. *J.A.M.A.*, 116:199 (Jan. 18), 1941.

Gastric Bleeding Treated by Food

BY FREQUENT feedings, I have reduced the mortality rate in severely bleeding peptic ulcer, to 2 percent. This routine is used:

6:00 A. M.:-Tea, white bread and butter.
9:00 A. M.:-Oatmeal with milk, white bread and butter.
1:00 P. M.:-Dinner; Choice of meat balls, omelette, broiled chops, fish balls, vegetable or meat au gratin, mashed potatoes, vegetable purees, vegetable soups, stewed apricots, apple sauce, gruel, rice and tapioca pudding.
3:00 P. M.:-Cocoa and crackers.
6:00 P. M.:-Sliced meats, cheese, tea, white bread and butter.
10:00 P. M.:-Cocoa or malted milk or ice cream.

As soon as patients complained that they were hungry in the evening, the supper was made larger. Vitamin C was given, in the form of ascorbic acid tablets. Colloidal aluminum hydroxide (Cremalin or Amphojel) was given every two hours, in teaspoonful doses. The patients were much more comfortable than those on the previous starvation diet, and recurrences of hemorrhage were less frequent.—W. D. MAYER, M. D., in *Rev. of Gastroent.*, Jan. - Feb., 1941.

Postoperative Thrombosis and Embolism

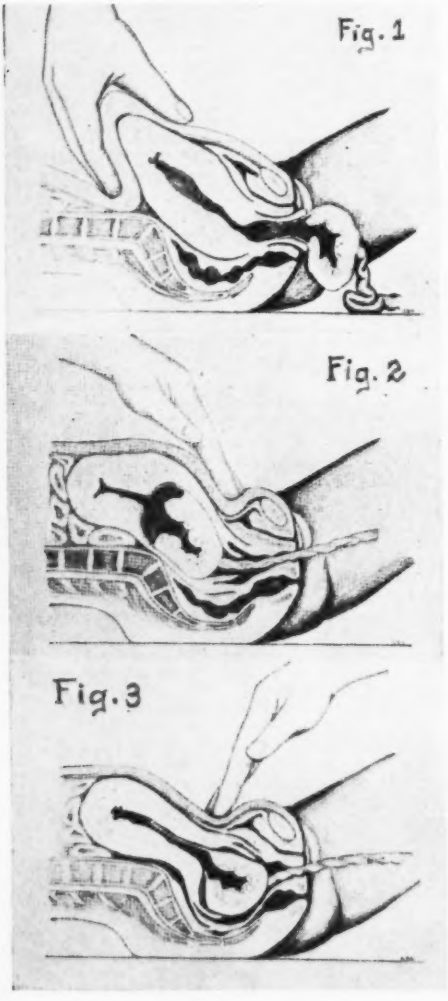
FATAL embolism frequently takes place before clinical signs or symptoms of thrombophlebitis appear, and *fatal pulmonary embolism rarely follows clinically diagnosed iliofemoral thrombophlebitis.* When it does, it usually occurs within the first 4 days, or comes from a fresh thrombosis which develops later in the other leg.

Location: Ninety percent of thrombophlebitis cases develop in the short or long saphenous vein or in the iliofemoral vein. Pelvic veins, arm veins, and superficial veins and varices of the leg make up the other ten percent.—K. K. NYGAARD, M.D., in *Proc. Staff Meet. Mayo Clin.*, Jan. 15, 1941.

Workers at Johns Hopkins Hospital routinely measure the legs, at thigh and ankle, of every patient who has undergone an operation likely to be followed by thrombophlebitis, such as hysterectomy, Cesarean section, prostatectomy, cholecystectomy, and so on. They feel that they can thus make an earlier diagnosis. Prevention is still the best method of treatment. The patient recovering from a severe illness or major operation should be forced to move the arms and legs in bed, forced to lie on one side and then on the other, should have the knee rest or pillows under the knees changed at intervals, and should have pain relieved enough so that they can be more free to move about. The injection of procaine or Eucupin solution into the wound edges, just before suturing any type of wound, or better before making the incision, results in a more comfortable patient. Patients should be gotten up earlier after operation, as most fatal embolisms do not occur until the patient is beginning to sit up or get up.—R. L. G.

Expelling the Placenta

IN THE rough method of Credé, the piston pressure in expelling the placenta forces the cervix down into the infected vagina, or even extrudes it (See Fig. 1),* and may lead to inversion or prolapse of the uterus, damage to the pelvic fascia, or increased hemorrhage. *Brandt's* method is much more satisfactory.



Immediately after delivery of the baby's head, oxygen is given freely to the mother, by inhalation, until the cord is cut. This seems to increase uterine contractions, and incidentally aerates the baby and promotes quick resuscitation.

The palmar surfaces of the fingers of the left hand are placed on the abdomen, at the junction of the body of the uterus and the lower relaxed portion of the cervix. By gentle pressure *upward* and *backward*, the fundus is carried out of the pelvis into the abdomen (See Fig. 2).

If the placenta is separated, the cord *does not rise*, and downward pressure *above the pubis* (See Fig. 3) will expel the placenta.

If the placenta is not separated, the cord *will* rise. The left hand is then placed with the fingers over the fundus and the thumb below, and very slight stimulation by massage will cause a contraction which may bring the placenta down, to be expelled as just described. The amount of bleeding with this method is small.—C. J. ANDREWS, M.D., in *J. South. Med. & Surg.*, Nov., 1940.

*All drawings by Dr. R. B. Nicholls, Norfolk, Va.

Rectal Diagnosis

HEMORRHOIDS are found in many persons, but we must not blame them for all rectal symptoms, as they are often symptomless. An ulcer or fissure is a more common cause of pain. *Do not mistake an external, thrombosed hemorrhoid for a prolapsed internal hemorrhoid* (skin covers the external hemorrhoid) and cause pain by attempting to reduce it.

After external inspection of the anus, always insert a gloved finger before passing the proctoscope. *Most hemorrhoids cannot be felt*, unless they are inflamed, fibrous, or thrombosed.

When a hemorrhoidectomy is performed, all associated lesions, such as fissure, infected crypts, and papillae, should be removed, or relief will not follow.

If a patient has diarrhea for more than a day or two, a rectal examination should be made. Many cases of diarrhea originate in the lower bowel, or result from fecal impaction in the rectum.

Suspect an abscess if there is constant pain, which gradually increases in intensity. Palpation of the perianal skin and gentle insertion of one finger into the rectum enable one to locate the painful area. Drainage must be established at once, because anorectal abscesses do not fluctuate until late.—E. H. TERRELL, M.D., in *South. Med. J.*, Feb., 1941.

Pelvic Pains and "Congestion"

THE female genito-urinary organs are liable to periodic attacks of neurovascular upsets or "congestion." This furnishes an explanation of many of the pains and aches referred to these organs. Acute or chronic pelvic inflammation that is apparently cured, may cause pain because of congestion of the pelvic viscera. The patient complains that "her insides always feel sore," that intercourse is painful, and that vaginal examination is very painful. All of these symptoms become exaggerated before menstruation, and may be partially relieved by the onset of the flow. Physical examination usually reveals only a sensitive vagina, a tender uterus, and pain on movement of the uterus or adnexa. The ovaries may be prolapsed and tender.

Treatment: Glycerine tampons will rapidly result in disappearance of the pain. Potassium bromide should be given, in 5-grain doses three times daily, with a full glass of water. A mild laxative should be prescribed.—F. J. MCCANN, M.D., in *Med. World (Lond.)*, Dec. 6, 1940.

Diagnostic Pointers

Psychic Symptoms in Brain Tumor

● One must think of brain tumor in a patient who shows a change of behavior, with emotional instability, apathy, and defective memory, if other causes, such as paresis, can be ruled out.—SAMUEL N. CLARK, M.D., Jacksonville, Ill.

Dental Caries and Candy

● Caries (cavities) of the teeth often follow the continued presence of either dextrose, sucrose (cane sugar), or starch in the mouth. Lactic acid is produced by the action of the salivary enzymes and bacteria on the sugar. *The continual sucking of hard candies results in decalcification of the teeth.*—J. L. BLASS, PH.G., D.D.S., in *J.A.M.A.*, Jan. 4, 1941.

Asymmetry of the Neck

● Asymmetry of the curves of the neck may be due to cervical adenitis, torticollis, arthritis of the region (including tuberculosis), congenital deformity or abnormality; or to a lateral curvature involving the cervical vertebrae.—J. J. NUTT, M.D., in *Ann. Int. Med.*, Dec., 1940.

Hyperthyroidism

● Intermittent periods of *auricular fibrillation* may be the suggestive symptom that leads to a diagnosis of hyperthyroidism.—H. A. CHRISTIAN, M.D., in "The Diagnosis and Treatment of Diseases of the Heart" (Oxford University Press, New York and Toronto).

Condyloma and Cancer

● Condylomatous growths should be suspected as malignant, and upon being removed, *all* should be sent to the laboratory for examination—DR. FRANK D. STANTON, in *Dover St. Clin. Rev.*, Apr., 1941.

Palpitation

● Attacks of palpitation due to *extrasystoles* (premature beats) are of little significance in diagnosis, because they occur so often when the heart is normal. Another form of palpitation is due to periods of *auricular fibrillation*. This is of more significance. When the periods are short, there is no way of distinguishing between palpitation due to extrasystoles and to auricular fibrillation, except by actual observation of the attack. *If palpitation is prolonged, the possibility of auricular fibrillation is increased.* Auricular fibrillation occurs oftenest with mitral stenosis, less often in chronic myocardial disease, and intermittently in hyperthyroidism.— H. A. CHRISTIAN, M.D., in "The Diagnosis and Treatment of Diseases of the Heart" (Oxford University Press, New York and Toronto).

"Housewife's Eczema"

● Most cases of "housewife's eczema" and inflammatory eruption of the skin, which is a common and obstinate condition, are caused by hypersensitivity to soaps and allied cleaners. Housewives, house servants, nurses, orderlies, cooks, hairdressers, dishwashers, bartenders, and surgeons are frequently afflicted.

The eczema is often misdiagnosed as ringworm; but treatment for ringworm does not cure and may make the eczema worse.

If possible, the patient should avoid contact with such agents. *The substitution of alkyl sulfonate compounds for soaps and cleansers results in cure of the eczema.* Such compounds may be obtained in bar or powdered form, are not expensive, and do not become rancid.—J. W. JORDAN, M.D., in *J.A.M.A.*, Sept. 21, 1940.

Fatigue in Heart Disease

● Excessive fatigue, in a patient without anemia, marked loss of weight, or evidence of a central nervous system lesion, may be a prominent or the only symptom of cardiac insufficiency (early decompensation of the heart).—H. A. CHRISTIAN, M.D., in "The Diagnosis and Treatment of Heart Disease" (Oxford University Press, New York and Toronto).

Ovarian Deficiency

● Hypoovarianism, with symptoms generally connected with the menopause, is fairly common in girls and young women between the ages of 12 and 25 years, and should be considered in making diagnoses.—MELVYN BERLIND, M. D., in *Med. Rec.*, Jan. 15, 1941.

Duodenal Diverticula

● Duodenal diverticula are found rather frequently on x-ray examination of the gastro-intestinal tract. After studying 310 cases, I feel that they have no clinical significance, and that their surgical removal does not relieve symptoms. Necropsy showed inflammatory changes in only 1 out of 14. Many diaphragmatic hernias were found associated with the diverticula.—S. WEINTRAUB, M.D., in *Radiol.*, Mar., 1941.

Senile Hypothyroidism

● All fires, whether those of our own bodies or otherwise, must have oxygen for combustion. If you are talking with people from 40 to 60 years of age, and ask them something quickly, and they look at you with their mouths open and ask, "What?" and they ask the second time, *give them a basal metabolism test* . . . It is interesting to see these people who have burned out their thyroids, without any pain or recognized trouble, but the chemical action is gone."—C. H. MAYO, M.D., in *Proc. Internat. Assembly Interstate Post.-Grad. Med. A.*, 1935.

THE DOCTOR'S STUDY

New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

By words the mind is excited and the spirit elated.—ARISTOPHANES.

Diabetic Manual

Joslin

A DIABETIC MANUAL, For the Mutual Use of Doctor and Patient. *By* ELLIOTT P. JOSLIN, M.D., Sc.D., *Clinical Professor of Medicine Emeritus, Harvard Medical School; Medical Director George F. Baker Clinic at the New England Deaconess Hospital. Seventh Edition; thoroughly revised. Illustrated. Philadelphia: Lea & Febiger. 1941. Price, $2.00.*

JOSLIN writes with a sense of human values. Here is no great clinician casting his pearls before swine, but a wise, learned, and kindly physician telling what he knows, so that others may be helped and encouraging them to help still others.

The patient who studies this guide thoroughly will be well equipped for his new start in life. His questions are answered in a special question-and-answer chapter.

Such pithy statements as these make good reading for the physician: "The slow onset of diabetes is favorable for the prevention of the disease" (with a low-carbohydrate, low-fat diet); "Lack of exercise leads to diabetes indirectly. Disuse of muscles is a direct factor, for it is largely in the muscles that the sugar formed from food is consumed . . Take special care, you men who are promoted from active outdoor lives to desk positions." This hint might well be noted by physicians, who almost uniformly eat too much and exercise too little.

Clinical Pellagra

Harris

CLINICAL PELLAGRA, *By* SEALE HARRIS, M.D., *Professor Emeritus of Medicine, University of Alabama, Birmingham; Assisted by* SEALE HARRIS, JR., M.D., *Formerly Assistant Professor of Medicine, Vanderbilt University, Birmingham, Alabama; Foreword by* E. V. MCCOLLUM, PH.D., SC.D., LL.D., *Professor of Biochemistry, Johns Hopkins University, Baltimore. St. Louis: The C. V. Mosby Company. 1941. Price, $7.00.*

THE title does not indicate the great variety of medical knowledge contained in this well-printed and beautifully illustrated book. There are many clinical photographs of pellagrous patients, including a few in full color, and of conditions simulating pellagra, and a valuable chapter on the differential diagnosis of this disease, which will aid the physician in differentiating it from sprue, pernicious anemia, atypical dermatoses and stomatitis, gastrogenic diarrhea, and other conditions.

Sutton's and Ashowoth's little publized work on the treatment of pellagrous patients with anterior pituitary preparations is reported in full. Complete details are given as to treatment with the various liver extracts, both oral and parenterally, nicotinic acid and riboflavin, adequate diets, and other measures.

The New International Clinics

Piersol

THE NEW INTERNATIONAL CLINICS; Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts. *Edited by* GEORGE MORRIS PIERSOL, M.D., *Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Volume 1; New Series Four. Philadelphia, Montreal, New York: J. B. Lippincott Company. 1941. Price, $3.00 for current year; $5.00 for back years.*

THE "New International Clinics" are among the most interesting medical volumes available today, because of their freshness, their wide range of interest, and their recognition of "new" authors. Medical literature suffers from a repetition of the same old material by the same old writers.

The *sedimentation rate* has been much applauded as a valuable means of ascertaining the activity of infections, but Louis Bailey, who spent two years in its study, finds that *so many factors enter into the sedimentation rate determination that it is of little value as a clinical guide.*

Oscar Wood discusses the diagnosis of shoulder pain, which may be caused directly or indirectly. Illustrative case histories are presented.

Veeder and Rohlfing give a review of immunization procedures that will interest the general clinician and the pediatrician.

Winkler discusses the hypometabolism which not infrequently follows thyroidectomy.

Powell presents a topic that apparently had not been widely recognized clinically—cerebral malnutrition, due to lowered blood sugar. In many of these patients, the diagnosis of neurasthenia could readily be made.

Clinical Chemistry

Reiner

MANUAL OF CLINICAL CHEMISTRY. *By* MIRIAM REINER, M.Sc., *Assistant Chemist to the Mount Sinai Hospital, New York; Introduction by Harry Sobotka, Ph.D., Chemist to the Mount Sinai Hospital, New York. 18 Illustrations. New York: Interscience Publishers, Inc. 1941. Price, $3.00.*

THIS slender volume sets forth, briefly and directly, the steps required in carrying out chemical examinations of the blood (glucose, protein, calcium, sulfanilamide content), urine, cerebrospinal fluid, feces, and gastric contents; functional tests of the liver and kidneys; sex hormone tests; and vitamin tests.

The physician who does his own laboratory work, the intern, and the laboratory technician will find complete technics of the standard and newest tests, which have often been buried in the literature.

One error is made in stating that the benzidine test for occult blood in the stools is not affected by pus, usual foods, or drugs. Meat often gives a positive test for blood.